

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A phosphor having the chemical formula:

$\text{Sr}_{4-x}\text{Mg}_y\text{Ba}_z\text{Si}_2\text{O}_8:\text{Eu}^{2+}$ $x(0 < x < 1, 0 \leq y \leq 1, 0 \leq z \leq 1)$ $(0 < x < 1, 0 < y \leq 1, 0 \leq z \leq 1)$,

wherein when the phosphor is excited by light having a main peak ranging from 400 to 480nm, the phosphor has a main emission peak ranging from 500 to 600nm.

2. (Previously Presented) The phosphor of claim 1, wherein the average particle size of the phosphor is less than 20 μm .

3. (Previously Presented) The phosphor of claim 1, wherein the average particle size of the phosphor is 5 to 15 μm .

4-5. (Cancelled)

6. (Original) The phosphor of claim 1, wherein a main emission peak of the phosphor shifts according to the concentration of Eu^{2+} .

7. (Original) The phosphor of claim 1, wherein the mole concentration of Eu^{2+} is 0.02 to 0.20 mol.

8. (Currently Amended) A light emitting device including a phosphor, comprising:

a light source;

a support for supporting the light source;

a light transmitting member provided at least one portion around the light source; and

a phosphor having a chemical formula: $\text{Sr}_{4-x}\text{Mg}_y\text{Ba}_z\text{Si}_2\text{O}_8:\text{Eu}^{2+}_x$
 $(0 < x < 1, 0 < y \leq 1, 0 \leq z \leq 1)$ ~~$(0 \leq x \leq 1, 0 \leq y \leq 1, 0 \leq z \leq 1)$~~ incorporated in the light transmitting member,

wherein when the phosphor is excited by light having a main peak ranging from 400 to 480nm, the phosphor has a main emission peak ranging from 500 to 600nm.

9. (Original) The light emitting device of claim 8, wherein the concentration of Eu^{2+} is 0.02 to 0.20 mol.

10. (Original) The light emitting device of claim 8, wherein the light transmitting member is a molding member.

11. (Original) The light emitting device of claim 8, wherein the mixing ratio of the phosphor with respect to the light transmitting member is 5 to 50 wt%.

12. (Original) The light emitting device of claim 8, wherein the light transmitting member is molded entirely around the light emitting device.

13. (Original) The light emitting device of claim 8, wherein the light transmitting member is molded partially around the light emitting device.

14. (Previously Presented) The light emitting device of claim 8, wherein white light is emitted by combining the light emitted from the light source and light excited by the phosphor.

15. (Original) The light emitting device of claim 8, wherein the concentration of Eu²⁺ included in the phosphor is 0.02 to 0.20 mol.

16. (Original) The light emitting device of claim 8, wherein in a case where the light emitting device is a top view type, the concentration of Eu²⁺ is 0.02 to 0.10 mol.

17. (Original) The light emitting device of claim 16, wherein the content of the phosphor with respect to the light transmitting member is 10 to 30 wt%.

18. (Original) The light emitting device of claim 8, wherein in a case where the light emitting device is a side view type, the concentration of Eu²⁺ included in the phosphor is 0.08 to 0.15 mol.

19. (Original) The light emitting device of claim 18, wherein the content of the phosphor with respect to the light transmitting member is 5 to 20 wt%.

20. (Original) The light emitting device of claim 8, wherein in a case where the light emitting device is used as a white light source of a backlight, the concentration of Eu²⁺ included in the phosphor is 0.02 to 0.10 mol, and the content of

the phosphor with respect to the light transmitting member is 15 to 50 wt%.

21. (Original) The light emitting device of claim 8, wherein in a case where the light emitting device is used as a blue light source of a backlight, the concentration of Eu²⁺ included in the phosphor is 0.02 to 0.10 mol, and the content of the phosphor with respect to the light transmitting member is 10 to 40 wt%.

22. (Original) The light emitting device of claim 8, wherein the light source is a gallium nitride light emitting diode.

23. (Currently Amended) A lamp type light emitting device including a phosphor, comprising:
a light source;
a support for supporting the light source;
a molding member provided at at least one portion around the light source; and

a phosphor having a chemical formula: $\text{Sr}_{4-x}\text{Mg}_y\text{Ba}_z\text{Si}_2\text{O}_8:\text{Eu}^{2+}_x$
 $(0 < x < 1, 0 \leq y \leq 1, 0 \leq z \leq 1)$ ~~$(0 < x < 1, 0 \leq y \leq 1, 0 \leq z \leq 1)$~~ incorporated in the
molding member,

wherein when the phosphor is excited by light having a main peak ranging from 400 to 480nm, the phosphor has a main emission peak ranging from 500 to 600nm.

24. (Currently Amended) A surface mounting type light emitting device including a phosphor, comprising:
a light source;
a support for supporting the light source;
a molding member provided at least one portion around the light source; and

a phosphor having a chemical formula: $\text{Sr}_{4-x}\text{Mg}_y\text{Ba}_z\text{Si}_2\text{O}_8:\text{Eu}^{2+}_x$
 $(0 < x < 1, 0 \leq y \leq 1, 0 \leq z \leq 1)$ ~~$(0 < x < 1, 0 \leq y \leq 1, 0 \leq z \leq 1)$~~ incorporated in the
molding member,

wherein when the phosphor is excited by light having a main peak ranging from 400 to 480nm, the phosphor has a main emission peak ranging from 500 to 600nm.

25-29. (Cancelled)

30. (Currently Amended) The phosphor of claim 1, wherein $0 \leq z \leq 1$ such that the phosphor comprises barium (Ba) and the chemical formula is $\text{Sr}_{4-x}\text{Mg}_y\text{Ba}_z\text{Si}_2\text{O}_8:\text{Eu}^{2+}x$ ($0 < x < 1$, $0 < y \leq 1$, $0 \leq z \leq 1$) ($0 < x < 1$, $0 \leq y \leq 1$, $0 < z \leq 1$).

31. (Currently Amended) The light emitting device of claim 8, wherein $0 < z \leq 1$ such that the phosphor comprises barium (Ba) and the chemical formula is $\text{Sr}_{4-x}\text{Mg}_y\text{Ba}_z\text{Si}_2\text{O}_8:\text{Eu}^{2+}x$ ($0 < x < 1$, $0 < y \leq 1$, $0 \leq z \leq 1$) ($0 < x < 1$, $0 \leq y \leq 1$, $0 < z \leq 1$).

32. (Currently Amended) The lamp type light emitting device of claim 23, wherein $0 < z \leq 1$ such that the phosphor comprises barium (Ba) and the chemical formula is $\text{Sr}_{4-x}\text{Mg}_y\text{Ba}_z\text{Si}_2\text{O}_8:\text{Eu}^{2+}x$ ($0 < x < 1$, $0 < y \leq 1$, $0 \leq z \leq 1$) ($0 < x < 1$, $0 \leq y \leq 1$, $0 < z \leq 1$).

33. (Currently Amended) The surface mounting type light emitting device of claim 24, wherein $0 < z \leq 1$ such that the phosphor comprises barium (Ba) and the chemical formula is $\text{Sr}_{4-x}\text{Mg}_y\text{Ba}_z\text{Si}_2\text{O}_8:\text{Eu}^{2+}x$ ($0 < x < 1$, $0 < y \leq 1$, $0 \leq z \leq 1$) ($0 < x < 1$, $0 \leq y \leq 1$, $0 < z \leq 1$).